(16)

1954-53 **File No.** MIP2851

B CLASS Public Works DEPARTMENT

J BRANCH

Subject:—

Repost on Malprabha

Project Dist. Belgaum

1

B [K] 1953

File No. MIP 2851

Std. Sectt. Slip 24-B

(569) 1,00,000 7-50—K2*
D. No. 2103, dated 22-6-22.]

DOCKET SHEET

Subject:— M Tapabha Project

File No. MIP 2851

P. W. DEPT.

BRANCH.

References:—

Old file 7383/36

Date.	To whom sent.	Notes and instructions.

MIP. 2851/82109
P.W.D.

3/1

T. Br.

The S.E., K.I.C expedited mdm No. MIP. 2851-J dt. the 14-8-82 marked very urgent

14/8/82

14-8-82.

Supdt.
14/8/82

14/8

16/8

¥3 MIP-285-1 | 86623

P.W.D.

J.B.~.

Resubmitted with a draft for approval

29/11/12

2/12

A.S.(III)

46

Telephone message from Bomworks, Bombay, to the S.E., K.I.C.

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p-1

Reference: Your letter No. M.I-9/2, dated 21st September 1951 and Govt. Express Letter No. M.I.P. 2851/86623-J, dated 2nd December 1952.

p 9

Please send by a special messenger today the irrigation project with whatever information is available regarding the present stage of the project estimated cost, irrigable area, etc., for Malaprabha Project. The information is required in connection with the famine relief team of the Govt. of India which is meeting in Bombay on the 31st ~~January~~ Dec. 52

Phoned Jeus 29.12.52

copy by hand in evening.

29-12-52

DRN.
29.12.52.

D.J. (RLE)

29/12

MIP.2851 | 1265-01

P.W.D.

J. Br.

The Malaprabha Project report was called for by telephone p.11 from the S.E., K.I.C. on 29-12-52 as it was urgently required for discussion with famine relief team of the Govt. of India which met in Bombay on the 31-12-52 As requested by the S.E. the preliminary report may be returned. However, the index plan pp 13-22 principal features and note may perhaps be retained in this office

p.27-28

2. The draft put up for approval may issue

The D.E.(I)

20/1/53 The index map and the note may be retained

D.S.(G+E).

E.E(I)

* Kept inclose

49

I.B.

A copy of the geological report on the Malaprabha Project site by Shri B. D. Tewari G.S. of India, was forwarded to the S.E., K.I.C. under G.L. No. 7383/36 S.B.(II) dt the 8-12-49 with a request to offer his remarks on the feasibility or otherwise of proceeding with this project after carefully going through the report

× slip A

2. A detailed report in the matter has now been received from the S.E K.I.C. and will be found at PP. 29-39 ante The S.E. has submitted details of information in respect of the various types of dams considered and states that the composite dam P. 36-37 with central masonry overflow spillway would be comparatively the cheapest in cost and the least encumbered with engineering difficulties

difficulties The S.E. further reports that of the two sites so far investigated viz. the one at Asoga about two miles upstream of Khanapur and the other at Bhatewadi about two miles further upstream, the Bhatewadi site is the more promising one As the site at Bhatewadi fits in well for a composite dam and as this scheme commands a large area of about 4 lakh acres in the scarcity belt of Dharwar and Belgaum Districts and will irrigate about 1·2 lakh acres, the S.E. is of the opinion that this scheme should be proceeded with as it will afford permanent protection to the scarcity area

3. In this connection it may be stated that the Malaprabha Project is one of the projects which were placed before the famine which Team of the Govt...

Govt of India which met in Bombay in December 1952. The report of the committee is awaited. The question of taking up this project may be decided on receipt of the Famine relief committee's report

Thro D.E(I)

16/2/53

19/2

D.S.(I&E)

I know both the proposed sites for the dam. The Bhatwadi site appears to be better one & may be accepted. The type of dam para 3-(4) [pp 36] as suggested by S.E. seems the most best and lowest in cost. As the rough costs of alternatives (3) & (4) are near enough, the S.E.

C.E.(I)

Secy.

may be asked to work out detailed estimates for (3) & (4). In (3) the waste weir will be costly & in (4) it/s protection below the dam Spill way section of dam would be regd

24/2/53

(i) The S.E. may proceed to prepare P&E for a composite dam at Bhatwadi

(ii) The irrigation channel should be taken a few below Mandoli. But is it

not possible to get the necessary area by taking off a canal from the Kolabi Weir

(iii) If sufficient area can be obtained by a higher canal from Kolabi it may be investigated whether a dam at Kolabi will a high level canal directly from the dam will not be a better proposition. The site at Kolabi is very hard, the gorge is narrow & conditions for an ungated dam are favourable. The only objection seems to be submergence of Kandung town. Even with heavy compensation for this the Kolabi site is worth considering

2
2.3.53

WRD
3/3

D
WRD

J.B.

Resubmitted with the necessary draft for approval

The D.E.(I)

7/3/53

9/3

9/3

D.S.(I+E)

47 13 MP. 2851/46851

P.W.D

J.B.n.

Submitted for information with reference to G.L. dt. 9-3-53 P.43-46

23/4/53

Thro' E.B.n

2. Await with refce. to para 3 (1,6,3) of the S.E's letter. Action will be taken on receipt of S.E's proposals.

D.S.(Q+E)

23/4/53

DSIEE

24/4

29/4

S.O

E. Br. to please state whether the S.E.'s proposals referred to in para. 3 of this letter have since been received.

29/5/53 To

E.B.

No such proposal has been rcvd - So far.

29/5/53

J. Br.

The S.E., K.I.C. expedited under No. MIP.245-1/4685-1-J dt. the 24th-6-53

23/6/53

ISSUED 24-6-53

Supdt.

~~573~~ 15

MIP. 285-1/468-5-1

P.W.D.

J. Bx

E. Bx. will please state whether the proposals referred to in para. 3 of the S.E.'s letter P.47 have since been received

DD
11/8/13

To

E. Bx. No proposal has been rec'd. so far as I'm.

[illegible]
11/8/13

To
J. Bx.

[illegible]

[illegible] (21.)
11.8

J.B.

G.B. will please state whether the proposals referred to in para. 3 of the S.E's letter have since been received

21/11/53

To

G.B.

No proposal has been received 23/11/53 so far fl.

26/11/53.

To 'J'B.

MIP. 285-1/465-1

P.W.D.

J.Bx.

E.Bx. will please state whether the proposals referred to in para.3 of the S.E's letter P.47 have since been received

11/8/13

To

E.Bx. No proposal has been rec'd. so far Sir.

11/8/13

To J.Bx

(31.)

MIP. 2851/46851

J.B.

attached G.B. is requested to obtain a copy of the S.E. K.I.C's letter dated the 20-4-53 for taking necessary further action in the matter

4/2/54

To

G.B. Returned

to file

No. M.I.9/2

Office of the Superintending Engineer,
Karnatak Irrigation Circle,
Dharwar, 21/9 Septr.1951.

To

The Chief Engineer,
Public Works Department,
Bombay-1.

Subject:- Report on Malaprabha Project -
District: Belgaum.

Reference: Government P.W.D.Reminder No.7383/365 dated the 25th July 1951.

The report in question will be submitted to Government on its receipt from the Executive Engineer, Irrigation Project Division (South), who has been expedited.

Superintending Engineer, K.I.C.

BR/21-9.

P.W.D.

Await

P.V.N
4.10.51

7-10-51 Suptd

J2519

Class (7-12-51)
7-2-52

7/10

Class D
8/6
J. Bsn.

MIP 2851

82109

The S.E., K.I.C. expedited
under No. MIP. 2851-J, dtd.
10-6-52 marked Very Urgent

Neem 5/10 11-6-52

8/6/52

10-6-52

Issue Exp. 24-9-53
10/6

5/3

No. [redacted] I.9/2 Office of the Superintending Engineer,
Karnatak Irrigation Circle,
C.V. Dharwar, 13th Sept. 1952.

To

The Chief Engineer to Government,
Public Works Department, Bombay-1.

Subject:- Report on the Malaprabha Project -
District Belgaum.

P.3

Reference: Government expeditor, P.W.D., No.MIP 2851/82109-J, dated the 14th August 1952 to this office.

The report on the Malaprabha Project is at present under scrutiny in this office and it will be submitted to you as early as possible.

Superintending Engineer, K. I. C.

MIP. 2851 | 86623 P.W.D.

J. Bn.

Await

17/9/52 17.9.52

Supdt

Supdt 16-9

J
16-9

P. W. D.
Plan No. MIP 2851
Control No. 86623
ISSUED
on 7.11.52

MIP 2856 | 86623

The S. E., K. G. C. expedite tender No MIP 2857/86623 dt 7-11-52

6/11/52 7.11.52.

Supdt 16-9-52

Express Letter 95

From Bamwadu, Bombay

To The S.E., K.I.C., Dharwar

No. MIP. 2851/86623-J P.W.D.

B.C. (Bibay No. 1)
2nd Dec. 52

Please refer to the correspondence ending with your lr. P.S- No. M.I. 9/2 dated the 13-9-52 and expedite submission of the report on the Malaprabha Project..

72

Project referred to Chairman without further delay

Supdt. P.W. Deptt.
Bombay

ISCO.
2/12/51

MALAPRABHA IRRIGATION PROJECT.

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1. Nature of Tract:

Practically the eastern half of the Bombay Karnatak receives inadequate rainfall and is thus a scarcity area. The scarcity tract comprises of the whole of Bijapur District and the eastern parts of Belgaum and Dharwar Districts.

2. The proposed scheme is expected to extend irrigation facilities to the large scarcity tracts lying mostly east of Savadatti in the Belgaum and Dharwar Districts. This area has scanty and uncertain rainfall.

3. The Malaprabha river flowing in the area has ample water resources which could be usefully utilised to mitigate the scarcity conditions.

Scope of the Scheme:

The idea of utilising the Malaprabha waters for irrigation facilities was conceived more than 90 years ago. Various proposals of storage and canals were considered in the past. Without going into details of the past investigations, it is enough to state here that the project as envisaged now comprises of the following:-

(1) A storage reservoir of about 12,000 Mcft. capacity on the Malaprabha river near Khanapur; &

(2) A Right Bank Canal taking off directly from the storage itself to command an area of 4 lac acres.

or

A lower Right Bank Canal taking off from a pick-up-weir near the Manoli Gorge (about 45 miles below the storage dam) to command 2.5 lac acres of the land east of Savadatti.

Storage Scheme:

The Malaprabha river runs through hilly tract upto Khanapur and further down the area is more or less a plain country with cultivated lands. Two sites have been investigated in the past. One is the Asoga site about 2 miles upstream of Khanapur and the other is the present site at Bhatewadi about 2 miles further upstream. The Asoga site has been abandoned in favour of the more promising Bhatewadi site which is now under investigation.

Investigation of the Bhatewadi site:

The site has been investigated in great detail. A number of bore holes have been taken and the site is inspected twice by the Geologists of the Geological Survey of India once in 1944 and once in 1949.

The Malaprabha at the Bhatewadi site runs through a narrow gorge flanked on either side by steep hill sides and thus affords favourable conditions for a high dam but on account of the narrow valley upstream a comparatively higher dam would be necessary. Based on the run-off data of the river observed for a number of years, it has been estimated that a safe maximum run-off of 12,000 M.cft. would be available at the Bhatewadi site. For storing this yield, a dam of about 2,600 feet in length and about 150 feet in height (above river bed) up to F.S.L. may be necessary. In order to consider an economical storage, various types of dams were considered and the result of these considerations have been embodied in a separate file of "Preliminary Note on the Types of Dams considered."

Canals:

The upper right bank canal taking off from the storage dam has traverse 40 miles stretch of

the country before it reaches the main command beyond the Karikatti ridge near Savadatti. The area commanded up to Karikatti ridge is 90,000 acres, but this area is generally not in need of irrigation so much as the other area further down on account of the somewhat assured rainfall. Hence, the extra length of canal required to reach the main command would mean a very costly affair.

The alternative lower right bank canal starting from a pick-up-weir near the Manoli Gorge (below Karikatti ridge) involves a shorter length of canal, but it has its draw back which makes it a very difficult and costly proposal. Any canal starting from a pick-up-weir nearabout the Manoli Gorge has to cross the ridges on the right flank requiring a long length of deep cuttings and a tunnelled section to reach the command beyond Savadatti. Therefore, although a lower canal would be comparatively shorter in length, its cost would be very high on account of the engineering difficulties involved in crossing the intervening ridges.

The above findings of the canal alignments are based on preliminary investigations, but they will have to be gone into in greater detail supplemented by detailed survey.

The canals are assumed to be only 8-month canals for irrigating non-perennial crops, especially food and fodder crops.

Approximate....

Approximate cost of the Scheme:

	Cost.
(1) Bhatewadi storage, Capacity 12,000 Mcft. Cost including land and house compensation...	Rs. 400 lacs.
(2) Malaprabha Right Bank Canal taking off from the storage directly; capacity 1500 cusecs; 120 miles in length ...	Rs. 500 lacs.
Total cost:	Rs. 900 lacs.

Alternatively,

(a) Storage dam at Bhatewadi as above:	Rs. 400 lacs.
(b) Lower Right Bank Canal from a pick-up-weir at Manoli Gorge, Capacity 1500 cusecs; 70 miles in length: ...	Rs. 450 lacs.
Total cost:	Rs. 850 lacs.

The principal features are given in a separate sheet.

4. Necessity of the Scheme:

Owing to the scanty and uncertain rainfall, it is very difficult to have a successful agricultural practice in the area without assured irrigation facilities.

The Left Flank of the Malaprabha river below Manoli is commanded by the proposed Ghataprabha Right Bank Canal and therefore this area has not been included in the Malaprabha Scheme. The area east of Savadatti lying between Malaprabha river in the North and Poona-Bangalore section of the Southern Railways in the south, comprises of a large tract of poor rainfall. A major portion of this area will be commanded by the proposed Malaprabha Project and it can be served by a Right Bank Canal.

The soils here are rich and would yield good crops with irrigation facilities. As an area of 2 to

3 lacs/...

TP 13

3 lac acres can be easily commanded, it is possible to utilise the entire water resources of the Malaprabha by providing a suitable distribution system. Such a scheme would need a dependable storage. Although the direct returns may be meagre, yet the irrigation scheme as contemplated would benefit, on its completion, a large scarcity area and thus bring in numerous indirect benefits. Therefore, the scheme deserves to be taken up as a protective work.

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30/12/52

BR/

Principal features of Malaprabha Scheme.

(1) Storage Dam near Bhatwadi and the Malaprabha Right Bank Canal tanking directly from the storage.

I Storage Dam near Bhatwadi.

(1) Proposed Storage	12000 M.cft.
(2) Height of proposed Dam from river bed to F.S.L.	148 feet.
(3) Length of Dam.	2800 ft. (approx)

II Malaprabha Right Bank Canal.

(1) Capacity at head	1500 cusecs.
(2) Length of canal.	120 Miles.
(3) Area commanded	4 lakh acres.
(4) Irrigable area (seasonal crops only)	1.2 lakh acres.

III Financial Aspect.

(a) Total cost of scheme		
(1) Cost of Head works		400 lacs.
(2) Cost of canal		500 lacs.
	Total	900 lacs.
(b) Total additional food grains per year.		33000 tons.
(c) Cost of additional food at Rs.300/ ton.		Rs.99,00,000

Manoli Gorge Scheme.

(2) Storage Dam near Bhatwadi and Lower Right Bank Canal from a pick-up-weir near Manoli.

I Storage Dam near Bhatwadi.

(1) Proposed storage	12,000 M.cft.
(2) Height of proposed Dam from river bed to F.S.L.	148 feet.
(3) Length of dam.	2800 ft. (approx)

II Lower Right Bank Canal from a pick-up-weir near Manoli.

(1) Capacity at head	1500 cusecs
(2) Length of canal	70 Miles
(3) Area Commanded	2.5 lakh acres
(4) Irrigable area	1.25 lakh "

(P.T.O)

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III Financial Aspect.

(a) Total cost of scheme

(1) Cost of Head works	Rs.400 lakhs.
(2) Cost of pick-up-weir and a canal of 1500 cusecs capacity at head with necessary distribution system.	Rs.450 "
Total	Rs.850 lakhs

(b) Total additional food grains per year at 0.3 tons/acre 37,500 tons

(c) Cost of additional food at Rs.300 per ton. 1-,12,50,000

30/12/52

30/12/52

2- 457

No. 179-9

Office of the Superintending Engineer,
Karnatak Irrigation Circle,
Dharwar (Post Box No.28),
30th December 1952.

To

The Chief Engineer to
the Government of Bombay,
Public Works Department,
Bombay-1.

Subject:- Malaprabha Project.

Reference: Telephone message dated 29-12-52 from BOMWORKS to the Superintending Engineer, K.I.C., Dharwar.

The proposed Malaprabha Irrigation Scheme is in the preliminary stage of investigation. The Scheme as now contemplated envisages:-

i) A storage near Khanapur in the Belgaum District.

ii) A Right Bank Canal taking off either from the storage Dam or from a pick-up-weir at the Manoli Gorge on the downstream near Saundatti.

2. As regards the storage scheme, two sites - one at Asoga about a couple of miles upstream of Khanapur and the other at Bhatewadi at some distance upstream of Asoga site - have been investigated. The site at Bhatewadi is favoured. A preliminary report on the alternative types of Dams considered and their rough probable costs, as also the Geological Reports, are sent herewith.

3. Further an index plan showing the proposed rough alignments of the Right Bank Canal, taking off from the storage directly and also the one from the pick-up-weir at Manoli Gorge, as well as the area commanded, is enclosed.

4. Rough principal features of the Scheme giving the irrigable area and the rough cost thereof also accompany.

5. The scheme is intended to extend irrigation facilities to a portion of the scarcity tracts in the eastern parts of Belgaum and Dharwar Districts lying between the Malaprabha river and the Poona-Bangalore section of the Southern Railway.

6. The original investigation papers sent herewith may kindly be returned when done with.

Accompts:-
1 Index plan (B.P.)
1 Principal features & a note.
1 Preliminary report on alternative dam types.
2 Geological Reports (1944 and 1949)

Superintending Engineer, K.I.C.
30/12/52

BR/29-12.

P. W. D.
Acc. No. MIP2851
Shelf No. 12 6501

No. MIP. 2851-J Letter 2719 P.W.D

B.C. (Bibay No. 1)

28th Jan 53

To

The S.E., K.I.C.

subject Malaprabha Project

Reference your letter No. M.I.9 dt. the 30-12-52 p 23

2. The preliminary report on the alternative dam types and the two geological reports received with your above-mentio letter

letter are returned herewith 28

3. The index plan principal features and note, are retained in the Secretariat

By order etc

Asst. Secy. to the G. of B
P. W. D.

D.A. 1 preliminary report and 2 geological reports. Not accompanied

ISSUED
Date 29-1-53

29/1/53

Asst. 25/2
30/1

Work 26/1

MALAPRABHA IRRIGATION PROJECT.

1. Nature of Tract:-

Practically the eastern half of the Bombay Karnatak receives inadequate rainfall and is thus a scarcity area. The scarcity tract comprises of the whole of Bijapur District and the eastern parts of Belgaum and Dharwar Districts.

2. The proposed scheme is expected to extend irrigation facilities to the large scarcity tracts lying mostly east of Savadatti in the Belgaum and Dharwar Districts. This area has scanty and uncertain rainfall.

3. The Malaprabha river flowing in the area has ample water reaources which could be usefully utilised to mitigate the scarcity conditions.

Scope of the scheme:

The idea of utilising the Malaprabha waters for irrigation facilities was conceived more than 90 ~~xx~~ years ago. Various proposals of storage and canals were considered in the past. Without going into details of the past investigations, it is enough to state here that the project as envisaged now comprises of the following:-

(1) A storage reservoir of about 12.000 M.cft. capacity on the Malaprabha river near Khanapur; &

(2) A Right Bank Canal taking off directly from the storage itself to command an area of 4 lac acres.

or

A lower Right Bank Canal taking off from a pick-up-weir near the Manoli Gorge (about 45 miles below the storage dam) to command 2.5 lac acres of the land east of Savadatti.

Storage Scheme:

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at Bhatwadi about 2 miles further upstream. The Asoga site has been abandoned in favour of the more promising Bhatewadi site which is now under investigation.

Investigation of the Bhatewadi site:-

The site has been investigated in great detail. A number of bore holes have been taken and the site is inspected twice by the Geologists of the Geological Survey of India once in 1944 and once in 1949.

The Malaprabha at the Bhatwadi site runs through a narrow gorge flanked on either side by steep hill sides and thus affords favourable conditions for a high dam but on account of the narrow valley upstream a comparatively higher dam would be necessary. Based on the run-off data of the river observed for a number of years, it has been estimated that a safe maximum run-off of 12,000 M.cft. would be available at the Bhatewadi site. For storing this yield, a dam of about 2,600 feet in length and about 150 feet in height (above river bed) up to F.S.L. may be necessary. In order to consider an economical storage, various types of dams were considered and the result of these considerations have been embodied in a separate file of "Preliminary Note on the Types of Dams considered."

Canals:

The upper right bank canal taking off from the storage dam has to traverse 40 miles stretch of the country before it reaches the main command beyond the Karikatti ridge near Savadatti. The area commanded up to Karikatti ridge is 90,000 acres, but this area is generally not in need of irrigation so much as the other area further down on account of the somewhat assured rainfall. Hence, the extra length of canal required to reach the main command would mean a very costly affair.

The alternative.....

The alternative lower right bank canal starting from a pick-up-weir near the Manoli Gorge(below Karikatti ridge) involves a shorter length of canal, but it has its draw back which makes it a very difficult and costly proposal. Any canal starting from a pick-up-weir nearabout the Manoli Gorge has to cross the ridges on the right flank requiring a long length of deep cuttings and a tunnelled section to reach the command beyond Savadatti. Therefore, although a lower canal would be comparatively shorter in length, its cost would be very high on account of the engineering difficulties involved in crossing the intervening ridges.

The above finding of the canal alignments are based on preliminary investigations, but they will have to be gone into in greater detail supplemented by detailed survey.

The canals are assumed to be only 8 month canals for irrigating non-pernnial crops, especially food and fodder crops.

Approximate cost of the scheme:

	Cost.
(1) Bhatewadi storage, capacity 12,000 M.cft. cost including land and house compensation.	Rs.400 lacs.
(2) Malaprabha Right Bank Canal Taking off from the storage directly; capacity 1500 cusecs; 120 miles in length.	Rs.500 lacs.
Total cost:	Rs.900 lacs.
Alternatively,	
(a) Storage dam at Bhatewadi as above:	Rs.400 lacs.
(b) Lower Right Bank Canal from a pick-up-weir at Manoli Gorge, capacity 1500 cusecs; 70 miles in length:	Rs.450 lacs.
Total cost:	Rs.850 lacs.

The principal features are given in a separate sheet.

4. Necessity of the scheme:

Owing to the scanty and uncertain rainfall, it is very

dirricult to .....

difficult to have a successful agricultural practice in the area without assured irrigation facilities.

The left Bank Flank of the Malaprabha river below Manoli is commanded by the proposed Ghataprabha Right Bank Canal and therefore this area has not been included in the Malaprabha Scheme. The area east of Savadatti lying between Malaprabha river in the North and Poona-Bangalore section of the Southern Railways in the South, comprises of a large tract of poor rainfall. A major portion of this area will be commanded by the proposed Malaprabha Project and it can be served by a Right Bank Canal.

The soils here are rich and would yield good crops with irrigation facilities. As an area of 2 to 3 lac acres can be easily commanded, it is possible to utilise the entire water resources of the Malaprabha by providing a suitable a distribution system. Such a scheme would need a dependable storage. Although the direct returns may be meagre, yet the irrigation scheme as contemplated would benefit, on its completion, a large scarcity area and thus bring in numerous indirect benefits. Therefore, the scheme deserves to be taken up as a protective work.

41455.

Principal features of Malaprabha Scheme.

(1) Storage Dam near Bhatwadi and the Malaprabha Right Bank Canal tanking directly from the storage

I. Storage Dam near Bhatwadi.

(1) Proposed storage	12000 M.cft.
(2) Height of proposed Dam from river bed to F.S.L.	148 feet.
(3) Length of Dam.	2800 ft.(approx)

II. Malaprabha Right Bank Canal.

(1) Capacity at head.	1500 cusecs.
(2) Length of canal.	120 Miles.
(3) Area commanded.	4 lakh acres.
(4) Irrigable area (Seasonal crops only)	1.2 lakh acres.

III. Financial Aspect.

(a) Total cost of scheme		
(1) Cost of Head Works.		400 lacs.
(2) Cost of canal.		500 lacs.
	Total	900 lacs.
(b) Total additional food grains per year.		33000 tons.
(c) Cost of additional food at Rs.300/ ton.		Rs.99,00,000

Manoli Gorge Scheme.

(2) Storage Dam near Bhatwadi and Lower Right Bank Canal from a pick-up-weir near Manoli.

I. Storage Dam near Bhatwadi.

(1) Proposed storage.	12,000 M.cft.
(2) Height of proposed Dam from river bed to F.S.L.	148 feet.
(3) Length of dam.	2800 ft. (approx)

II. Lower Right Bank Canal from a pick-up-weir near Manoli.

(1) Capacity at head	1500 cusecs.
(2) Length of canal.	70 miles.
(3) Area Commanded.	2.5 lakh acres
(4) Irrigable area.	1.25 lakh "

(P.T.O)

III Financial Aspect.

(a) Total cost of scheme.

(1)	Cost of Head Works.	Rs.400 lakhs.
(2)	Cost of pick-up-weir and a canal of 1500 cusecs capacity at head with necessary distribution system.	Rs.450
	Total	Rs.850 lakhs.

(b) Total additional food grains per year at 0.3 tons/acre. 37,500 tons

(c) Cost of additional food at Rs.300 per ton. Rs. 1,12,50,000

R 41453

35-29

No. M.I.9(1) Office of the Superintending Engineer,
Karnatak Irrigation Circle,
Dharwar, 4th Feb. 1953.

To

The Chief Engineer to Government,
Public Works Department, Bombay-1.

Subject:- Malaprabha River Project -
Bhatewadi Dam site in Belgaum
District.

Reference: Government letter, P.W.D., No. 49
7383/36-I.B.(II) dated 8-12-1950 and
this office letter No.M.I.9(2) dated
13-9-1950.

At the very outset it may be stated that the foundation exploration of the Bhatewadi site by trial bores and the latest geological reports thereon have not revealed any serious objection to this site. The only feature that affects the cost aspect is the deep seating of sound rock which is some 30 feet to 80 feet below on the right flank and 30 feet to 130 feet below on the left flank and which underlies a thick overburden of soft friable soils. These foundation conditions will, no doubt, need heavy and costly foundations. The other factor which affects the cost of the Scheme is the height of dam for a relatively small storage. If these adverse features are encountered by selection of a suitable type of dam which would be both economical in cost and suited to the peculiar local conditions, the project will, no doubt, be feasible.

2. Type of Dams:-

Though the site has a narrow gorge, it is not suitable for an arched dam on account of deep foundations and flexible nature of flanks. The choice naturally falls on a straight gravity type of dam. The following sections will give the discussion of different types of gravity dams:

(a) Masonry or Concrete Dam:

(i) The investigations carried out previously were purely on the basis of a masonry dam as it appears that an earth dam of such a height was then considered to be an unsafe proposition. Because the modern technique of control and design of rolled fill earth dam of this height was not familiar then in this country

(ii) The depths of sound rock in foundation are rather unusual in the present case. The foundations for a masonry or concrete dam will therefore be very costly. Hence, these unfavourable foundation conditions will maturally preclude adoption of either masonry or concrete gravity dam.

(b) Rolled fill earth dam: According to the principle of a flexible dam on flexible nature of foundations and in view of the fact that suitable soils are available in large quantities in the vicinity, the Bhatewadi site can be said to be quite suited for an earth dam. This would have been the cheapest proposal but for the major problem of location of temporary river diversion to deal with the large floods of the order of about 76,000 cusecs, as estimated by Ingli's formula for a Ghat catchment of 124 Sq.miles, during the construction period which will extend for 3 or 4 seasons.

As.....

As the gorge is narrow and composed of soft erodable soils, the provision of the temporary river diversion on any one of the flanks of gorge itself is out of question. If the same was to be located in one of the flank saddles, excavation required for the approach and tail channels would be enormous, being of the order of 2500 feet long, 400-500 feet wide and 100 feet maximum in depth. Besides, the local strata being soft, such a channel would entail heavy and costly protective works, to prevent erosion and retrogression, which is a risky and costly proposition on the whole.

Thus, a fill earth dam though cheaper than a masonry or concrete dam, does not appear to be a feasible proposition on account of engineering difficulties associated with the unavoidable temporary river diversion arrangement

(c) Composite Dam: A composite dam having a small length of central masonry section for accommodating temporary as well as permanent surplussing arrangements and earth flanks would suit the peculiar physical features of the Bhatewadi site. Besides being a safe proposition this type of dam compares very favourably with the earth fill dam in matter of cost. The central masonry portion required would be about 600 feet to 700 feet in length for which sound foundations would be available at a depth of 30 feet to 40 feet.

In the adoption of this type of dam for the Bhatewadi site, there are two alternatives; they are -

(i) Composite dam - earth flanks and central masonry with a permanent saddle spillway.

(ii) Composite dam - earth flanks and central masonry - with central masonry overflow spillway.

3. Rough estimates of the above alternative types of dams at Bhatewadi site for a storage capacity of 12000 M.Cft. are as follows:-

Type of Dam	Approx.cost in lakhs.
(1) Full masonry dam ...	Rs.612 lakhs.
(2) Full earth dam (based on profiles suggested by Shrii G.G.Dhanak) (Note:- Although Rs.25 lakhs are provided for river diversion, it will not be possible to make suitable arrangements at this cost.)	Rs. 357 lakhs
(3) Composite dam with permanent saddle spillway.	Rs. 412 "
(4) Composite dam with central masonry overflow spillway.	Rs. 354 "

Of the four types of dams considered, it is seen that the composite dam with central masonry overflow spillway would be comparatively the cheapest in cost and the least x encumbered with engineering difficulties.

The pertinent details of the above types of dam have been compiled in a file as a "Preliminary Report on Alternative Dam sites for Bhatewadi Site" and this file together with two geological reports, has been submitted to Government under this office letter No. M.I.9 dated the 30th December 1952.

4. .....

4. Of the two sites so far investigated, the one at Asoga about two miles upstream of Khanapur and the other at Bhatewadi, about two miles further upstream, the Bhatewadi site is the more promising one. Based on the runoff data of the river for a number of years, it has been estimated that a maximum dependable yield of 12,000 M.cft. would be available at this site. For storing this yield, the dam of about 2,600 feet in length and 150 feet in height (above river bed) at F.S.L.would be required. As the site at Bhatewadi fits in quite well for a composite dam and particularly in view of the fact that this Scheme commands a large area of about 4 lakhs of acres in the scarcity belt of Dharwar and Belgaum Districts and will irrigate about 1.2 lakhs of acres of rich soils, I consider that this Malaprabha Project should be proceeded with. Such a scheme though somewhat costly, is worth undertaking as it will afford permanent protection to the scarcity area.

5. A note giving the scope and the principal features of the scheme and explaining its necessity is enclosed herewith.

Accompt:

1 Note.

Chairman 4/2/53

for Superintending Engineer, K.I.C.

BR/4-2.

4/2/53

3 & 26

No.M.I.9./2

Office of the Superintending Engineer,
Karnatak Irrigation Circle,
Dharwar: Post Box No.28.
Dated:- 4th February 1953.

To

The Chief Engineer to Government,
Public Works Department,
Bombay.

Subject:- Malaprabha River Project.
Bhatewadi Dam site in Belgaum District.

Reference:- Government letter P.W.D.No. M.I.P.2851-J of 28-1-1953.

In continuation of this office No.M.I.9/1/ of 4-2-1953 a file containing the "Preliminary report on the alternative Dam Types" and the two Geological reports, received with the Government letter referred to above, are resubmitted herewith for reference.

Accomnts.

As above.

Kept below

for Superintending Engineer,K.I.C.

4/2/53

4/2/53

VBJ/4-2.

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7-2-53

No. MPW. 255-1-J

Letter No. P.W.D

B.C. (Library No. 1)

9th March 53

To

The S.E., K.I.C

subject Malaprabha River Project
Bhatewadi Dam site in
Belgaum District

P.35

Reference your letter No. M.I. 9/1 dated the 4-2-53

2 You are requested to proceed with the work of preparation of plans and estimates for a composite dam at Bhatewadi. The following remarks are offered

(i) The irrigation channel should be from a weir below Amadi. But is it not possible to get the necessary area by taking off a canal from the Kolchi weir?

(ii) If sufficient area can be obtain by a higher canal from Ko it may be investigated w a dam at Kolchi, with a [illegible]

dam will not be a better proposition.

The rock at Koldi is very hard, the gorge is narrow and conditions for an overflow dam are favourable. The only objection seems to be submergence of Ramdug town. Even with heavy compensation for this the Koldi site is worth considering.

3. The file containing the Preliminary report on the alternative Dam types and the two geological reports received with your letter No. M.I. 9/2, dt. the 4-2-53, are returned herewith.

Accordly
ISSUED
[illegible]

By order etc.

Dy. Secy. to the G. of B. D.A. I/c

D.W.D

6/3/53

Preliminary report on the alternative dam types & 2 geological reports.

No. M.I.9

Office of the Superintending Engineer,
Karnatak Irrigation Circle,
Camp via Dharwar, 20th April 1953.

To

The Chief Engineer (Irrigation),
Public Works Department, Bombay-1.

Subject:- Malaprabha River Project - Bhatewadi Dam site in Belgaum District.

Reference: Government letter No. MIP 2851 J, dated the 9th March 1953.

With reference to your letter No.quoted above, I have to state as follows:-

2. There are at present two Project Sub-Divisions -

(1) the Karnatak Major Irrigation Project Sub-Division No.1, Belgaum;
(2) the Karnatak Major Irrigation Project Sub-Division No.2, Dharwar

These two Project Sub-Divisions are under Irrigation Project Division(South), Dharwar. They are fully engaged in field and office work of the Ghataprabha Valley Development dam project. As such, there is no staff at all to undertake investigation of this and other miscellaneous proposals.

3. Proposals for opening a new Sub-Division for the above purpose will be submitted to Government separately.

Superintending Engineer, K.I.C.

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Express letter

From Bonwarks, Bibay

To The S.E., K.I.C., Dharwar

F.C. pl see MIP 2855/5142

No. MIP. 2855-1-I

P.W.D

B.C. (Bibay No. 1)

21st July 53

Please refer to the correspondence ending with your letter No. M.I.9, dated the 20-4-53 regarding Bhatewadi Dam site on the Malaprabha river in Belgaum District, and expedite submission of your proposals referred to in para 3 thereof, at an early date

Supdg. I.P.W.D, Bombay.

ISSUED
Date.....

MIP. 2851/4985-1

P.W.D.

T.B.

Resubmitted with a draft for approval

20/7/13

20/7/13

Supdt.